

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for mounting a seal in a fuel cell, the method comprising:

 forming a membrane electrode assembly ~~formed by~~ holding an electrolyte membrane between a first electrode and a second electrode ~~and having a seal mounting portion;~~

 ~~a separator plate layered on both surfaces of the membrane electrode assembly so as to form gas passage; and~~

 ~~a frame shaped separator plate held between the membrane electrode assembly and the separator plate so as to seal the gas passage in air tight;~~

 ~~the method comprising:~~

 preforming the seal into a ~~predetermined shape~~ frame;

 ~~setting the seal at the mounting portion of the membrane electrode assembly;~~

 wherein all the elements of the membrane electrode assembly are close-fitted into an inside of the seal; and

 ~~integrally forming wherein the seal with and the membrane electrode assembly are~~ integrally bonded.

2. (currently amended): A method for mounting a seal in a fuel cell, the method

comprising:

forming a membrane electrode assembly ~~formed~~ by holding an electrolyte membrane between a first electrode and a second electrode;

~~a separator plate layered on both surfaces of the membrane electrode assembly so as to form gas passage; and~~

~~a frame shaped separator plate held between the membrane electrode assembly and the separator plate so as to seal the gas passage in air tight;~~

~~the method comprising:~~

preforming the seal into a frame;

wherein using a hot pressing die having a first die and a second die is used;

setting the first electrode is set in the first die;

~~preforming the seal into a predetermined shape and coating an adhesive is coated~~ on a portion ~~thereof of the seal~~ with which the electrolyte membrane is contacted;

setting the seal is set at a circumference of the first electrode in the first die;

~~layering~~ the electrolyte membrane is layered on the adhesive coated on the seal and the first electrode;

~~layering~~ the second electrode is layered on the electrolyte membrane; and

~~close contacting the first and second electrodes[[,]]and the electrolyte membrane are close-fitted into[[,]] and an inside of the seal, and the first and second electrodes, the electrolyte membrane, and the seal are close-contacted~~ by holding them with the first and second dies, and they are integrally forming them bonded by hot pressing.

3. (currently amended): A method for mounting a seal in a fuel cell, the method comprising:

forming a membrane electrode assembly ~~formed~~ by holding an electrolyte membrane between a first electrode and a second electrode;

~~a separator plate layered on both surfaces of the membrane electrode assembly so as to form gas passage; and~~

~~a frame shaped separator plate held between the membrane electrode assembly and the separator plate so as to seal the gas passage in air tight;~~

~~the method comprising:~~

preforming the seal into a frame;

wherein using a hot pressing die having a first die and a second die is used;

~~setting~~ the first electrode is set in the first die;

~~preforming~~ the seal into a predetermined shape in a condition in which a reinforcement member is inserted into the seal and an inner portion of the reinforcement member projects inwardly;

~~layering~~ the seal is layered at a circumference of the first electrode in the first die in a condition in which the inner projected portion of the reinforcement member overlaps with a portion of the first electrode;

~~layering~~ the electrolyte membrane is layered on the first electrode in a condition in which the inner projected portion of the reinforcement member is held between the first electrode and the electrolyte membrane;

~~layering~~ the second electrode is layered on the electrolyte membrane; and
~~close-contacting~~ the first and second electrodes~~[[,]]~~and the electrolyte membrane are
close-fitted into an inside of the seal, the first and second electrodes, and the electrolyte
membrane, the seal, and the reinforcement member are close-contacted by holding them with the
first and second dies, and they are integrally ~~forming them~~ bonded by hot pressing.

4. (currently amended): A method for mounting a seal in a fuel cell, the method
comprising:

forming a membrane electrode assembly ~~formed~~ by holding an electrolyte membrane
between a first electrode and a second electrode;

~~a separator plate layered on both surfaces of the membrane electrode assembly so as to~~
~~form gas passage; and~~

~~a frame shaped separator plate held between the membrane electrode assembly and the~~
~~separator plate so as to seal the gas passage in air tight;~~

~~the method comprising:~~

preforming the seal into a frame

wherein ~~using~~ a hot pressing die having a first die and a second die is used;

~~setting~~ the first electrode is set in the first die;

~~preforming~~ the seal is preformed into a predetermined shape in which a inner portion
thereof projects inwardly;

~~layering~~ the seal is layered at a circumference of the first electrode in the first die in a condition in which the inner projected portion of the seal overlaps with a portion of the first electrode;

~~layering~~ the electrolyte membrane is layered on the first electrode in a condition in which the inner projected portion of the seal is held between the first electrode and the electrolyte membrane;

~~layering~~ the second electrode is layered on the electrolyte membrane; and

~~close-contacting~~ the first and second electrodes [[,]] and the electrolyte membrane are close-fitted into, and an inside of the seal, and the first and second electrodes, the electrolyte membrane, and the seal are close-contacted by holding them with the first and second dies, and they are integrally forming them bonded by hot pressing.

5. (currently amended): A method for mounting a seal in a fuel cell, the method comprising:

forming a membrane electrode assembly ~~formed~~ by holding an electrolyte membrane between a first electrode and a second electrode;

~~a separator plate layered on both surfaces of the membrane electrode assembly so as to form gas passage; and~~

~~holding a frame shaped separator plate held between the membrane electrode assembly and the separator plate so as to seal the gas passage in air tight;~~

~~the method comprising:~~

preforming the seal into a frame

~~wherein using~~ a hot pressing die having a first die and a second die is used;
~~preforming the seal into a predetermined shape and coating an adhesive~~ is coated on a portion ~~thereof of the seal~~ with which the electrolyte membrane is contacted;
~~setting the seal~~ is set in the first die;
~~preforming the membrane electrode assembly~~ is preformed so as to expose a portion of the electrolyte membrane toward a surface of the membrane electrode assembly;
~~setting the membrane electrode assembly~~ is set in the first die in a condition in which the exposed portion of the electrolyte membrane overlaps with the adhesive coated on the seal;
~~close contacting seal and the membrane electrode assembly~~ is close-fitted into an inside of the seal, and the seal and the membrane electrode assembly are close-contacted by holding them with the first and second dies, and the seal and the membrane electrode assembly are integrally forming them bonded by hot pressing.

6. (original): A method for mounting a seal in a fuel cell according to claim 2, wherein a reinforcement member is inserted into the seal in a condition in which a portion thereof is exposed, and an adhesive is coated on the exposed portion of the reinforcement member.

7. (original): A method for mounting a seal in a fuel cell according to claim 2, wherein a reinforcement member is inserted into the seal, and an adhesive is coated on the seal.

8. (original): A method for mounting a seal in a fuel cell according to claim 1,

wherein the seal is formed from materials of the elastomer type which require heating for vulcanizing or hardening, or materials of the thermoplastic elastomer type which do not require heating.

9. (original): A method for mounting a seal in a fuel cell according to claim 1, wherein the seal is formed from liquid materials of the cold setting type or the thermosetting type.

10. (original): A method for mounting a seal in a fuel cell according to claim 3, wherein the reinforcement member is a sheet formed from a resin or a metal, or a wire made from a resin or a metal.

11. (original): A fuel cell formed by layering plural membrane electrode assemblies via a separator plate respectively, wherein the membrane electrode assembly is mounted with a seal by a method for mounting a seal in a fuel cell according to one of claims 1 to 10.

12. (new): A method for mounting a seal in a fuel cell according to one of claims 1 to 10, wherein the seal includes an outer linear protrusion and an inner linear protrusion disposed inside thereof;

the outer linear protrusion contacts adjacent upper and lower seals of adjacent upper and lower fuel cell units when fuel cell units are assembled to a fuel cell stack;

the inner linear protrusion is provided at an upper side or a lower side of the seal; and

the inner linear protrusion contacts the second electrode of the adjacent fuel cell unit.

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13. (new): A method for mounting a seal in a fuel cell according to one of claims 1 to 10, wherein the second electrode has larger area than that of the first electrode, and has a circumference projecting from the first electrode.

14. (new): A method for mounting a seal in a fuel cell according to one of claims 11, wherein the second electrode has larger area than that of the first electrode, and has a circumference projecting from the first electrode.